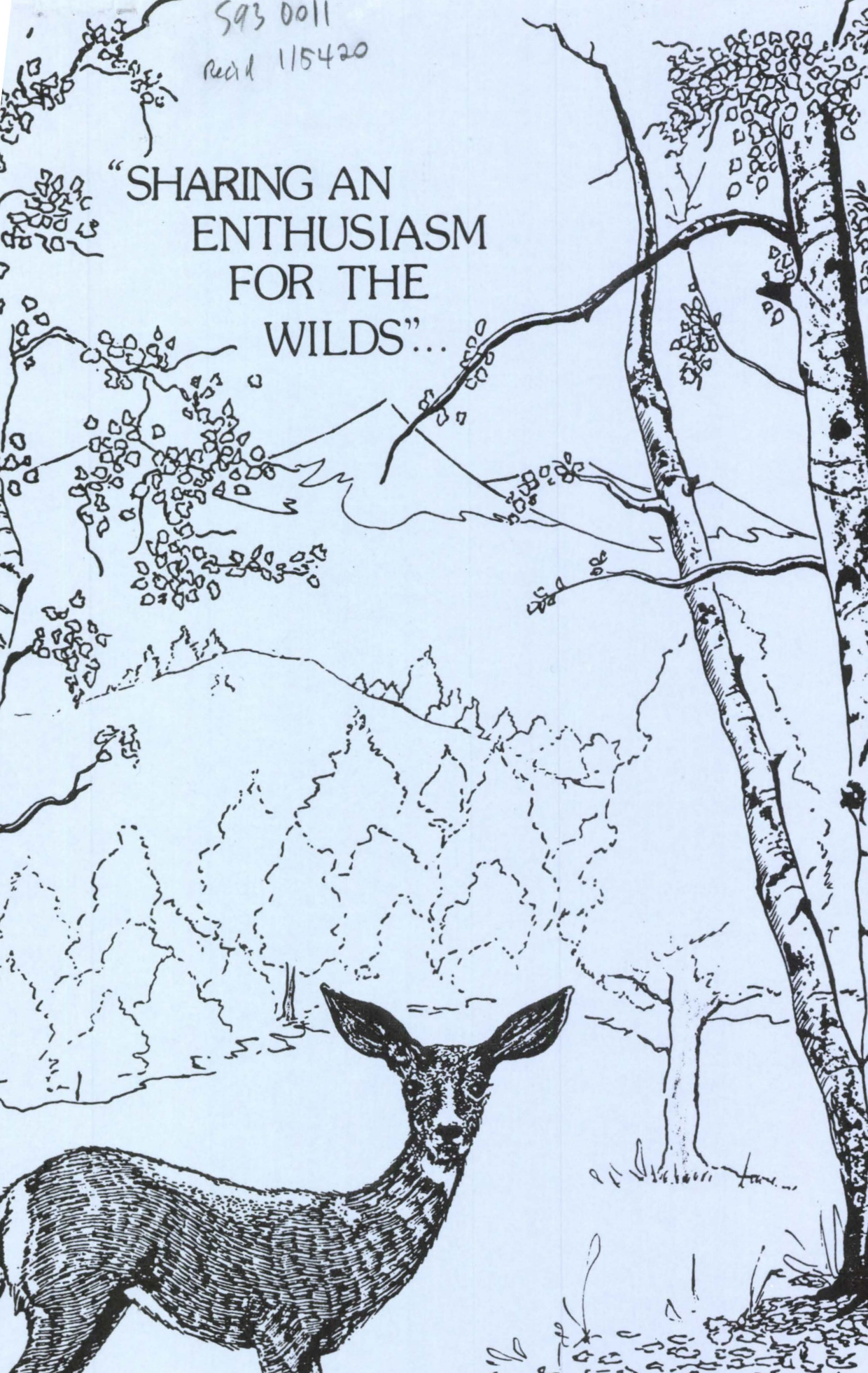


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"SHARING AN
ENTHUSIASM
FOR THE
WILDS"...



SHARING AN ENTHUSIASM FOR THE WILDS:
Wilderness Awareness Through Education and
Interpretive Services for Northern Arizona.

Connie Birkland
Recreation Officer
Peaks Ranger District
5075 North Hwy 89
Flagstaff, Arizona 86004
(602)526-5837

Clemson Class of 1991
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ABSTRACT

AUTHOR: Connie Birkland
Recreation Officer
Coconino National Forest
Peaks Ranger District
5075 North Hwy. 89
Flagstaff, Arizona 86001
(602) 526-5837

TITLE: Sharing An Enthusiasm For The Wilds: Wilderness Awareness Through
Education and Interpretive Services for Northern Arizona.

ABSTRACT:

This study documents the evaluation and planning process of producing a wilderness awareness program for Northern Arizona. The objective was to develop a strategy to inform wilderness users, potential users, and nonusers about: wilderness uses as set forth in the 1964 Wilderness Act; and how to avoid or mitigate impacts in wilderness. Documentation includes: research of general public opinions of wilderness; trends in wilderness recreation; and effectiveness of educational programs. Methods and results include: a wilderness value survey of Northern Arizona's wilderness users; selection of an educational program plan; and development of a marketing program for implementing wilderness education on the Coconino National Forest. This report recommends a strategically planned educational program be implemented as an "indirect" approach to wilderness management.

Keywords: Wilderness, Wilderness Awareness, Education Program, Interpretive Services.

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EXECUTIVE SUMMARY

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Author: Connie Birkland
 Recreation Officer
 Peaks Ranger District
 Coconino National Forest
 5075 North Hwy. 89
 Flagstaff, Arizona 86004
 (602) 526-5837

Summary:

The Wilderness Act of 1964 identified the need for federal agencies to provide for public enjoyment of wilderness while protecting the wilderness in it's natural state. The Coconino National Forest Land Management Plan further supports this direction requiring managers to provide a quality experience for the public while protecting the wilderness. Managers continue to look for new ways to protect these fragile environments.

The intent of this study is to develop an effective wilderness education program through "indirect" management techniques that will successfully influence wilderness users and potential users attitudes toward protecting the wilderness. Education of wilderness philosophy and the purpose for wilderness will benefit nonusers as well. Specific themes and text for programs are not developed in this document.

Project development first began with research of the topic area of wilderness educational programs. Very little information was found. I decided I needed more information locally on Northern Arizona wilderness users and their values, benefits and uses of wilderness. A market research survey was developed and contacts were made for potential partnerships in developing an educational program. These same contacts became sources for distributing the wilderness questionnaires. The REI store in Tempe, Arizona was a major partner in distributing the questionnaire through a newsletter mailing to 700 members. Distribution was also arranged with other cooperators such as retail outlets, Northern Arizona University, Fairfield Snowbowl Ski Area, Flagstaff Chamber of Commerce, and Forest Service District offices. A total of 300 questionnaires were made available to the public by this voluntary participation process. A total of 105 surveys were returned and analyzed. Results are summarized in this document.

The research process proceeded and other surveys were identified. In particular, Professor Virden's statewide survey of the Arizona voting public and their opinions toward wilderness, was very useful. This survey provided a comparison from a different population sample. Information included Arizona's wilderness nonuser population and their attitudes toward wilderness.

Based on the research and surveys, alternatives for wilderness awareness programs were developed as well as the evaluation criteria. A preferred alternative was selected, meeting the evaluation criteria for a wilderness educational program. This program (Alternative E) combined alternatives, providing the greatest number of educational programs and their potential. They include: structured educational programs, interpretive and information sharing programs, and field information sharing and signing programs. Evaluation criteria included:

1. Meets Coconino National Forest LMP and mission, goals and objectives.
2. Effectiveness of program based on research analysis.
3. Economic value of implementation (indirect vs direct management cost).
4. Support of the agency and other managers.
5. User satisfaction.
6. Nonuser satisfaction or benefits.
7. Coincide with needs determined by current trends.
8. Potential partnerships.
9. Can effectiveness of the program be monitored?

A marketing plan was then developed for the program (Alternative E) in effort to determine the best approach in getting the educational programs out to the target market, and achieving the Forest's objectives. This process involved the following steps:

1. Examination of the Forest's mission, goals, and objectives.
2. Analysis of the Market research (Wilderness Value Survey).
3. Situation Analysis or determination of external and internal influences.
4. Formulation of a marketing strategy to reach the desired objectives.

In summary, there is a need for sharing of information on wilderness ethics, philosophy, history and natural environments. As an "indirect" method of managing wilderness the proposed program of education and interpretation is believed to be the most desirable process. This program provides the greatest potential to teach individuals self-regulation and modified behavior in favor of wilderness preservation for years to come. Protection of wilderness resources can not be accomplished by "direct" management alone. The public must understand the values of wilderness and how to take an active role in preventing impacts from occurring.

Future recommendations:

Additional steps are needed in the planning process:

- A. Development of an Action Plan to determine the strategy for implementation.

This will include:

1. Developing individual program needs.
2. Determining who is responsible for these programs.
3. Initial start-up dates and completion dates.
4. Costs of implementing the programs.
5. Monitoring programs.
6. Implement needed change based on monitoring results.

- B. Get the support of frontline individuals early in the process, develop ownership. Provide special interpretive training. Utilize new ideas.
- C. Coordinate efforts Forest-wide to develop program strategies.
- D. Develop critical partnerships for future implementation and funding. Give partners a meaningful piece of the management.
- E. Amend LMP spreadsheets to incorporate budget planning and target dates.
- F. Initiate the planning process for interpretive displays, school programs, brochures, maps, audio-visual aids, and promotional items (utilize partnerships).
- G. Develop and schedule training programs for special groups and Forest Service employees.
- H. Actively participate in current Forest environmental educational programs to incorporate wilderness ethics, philosophy, etc.
- I. Field survey conducted by wilderness rangers in the summer of 1992 to validate Wilderness Value Survey results.
- J. Continue current wilderness education programs and improve as needed.

"Wilderness is a resource which can shrink but not grow. Invasions can be arrested or modified in a manner to keep an area usable either for recreation, or for science, or for wildlife, but the creation of new wilderness in the full sense of the word is impossible."

Aldo Leopold

INTRODUCTION

For more than a century, supporters of wilderness have argued for it's preservation. Passage of the 1964 Wilderness Act provided the avenue to legally protect this heritage of wildness. Those responsible for protecting wilderness have found legislation alone is not enough. Impacts are increasingly more evident due to pressures of a population eager to escape the crowded cities and suburbs where natural ecosystems are disappearing.

Informational methods must be created and implemented to inform people the reasons for "no-trace" practices, and to let them see positive results. Acceptance of these techniques along with self-regulation will then become more readily practiced.

STATEMENT OF PURPOSE

The purpose of this study is to determine what type of wilderness education program on the Coconino National Forest and for Northern Arizona will be most effective in providing wilderness users, potential users, and non-users, an even greater appreciation for wilderness and the natural environments. An educational program must reach out to citizen groups of various ages, cultures and educational backgrounds with the message of wilderness preservation as a shared citizen philosophy. The intent of this education program is two-fold: to demonstrate how users can minimize wilderness impacts through positive actions, and secondly, to explain how wildernesses are managed for more than just recreation.

The protection of the wilderness naturalness and solitude is a continuing concern of both wilderness managers and many citizens. Impacts occurring within wildernesses often result from those users who love and value these areas, who may unknowingly impact primitive areas even in small increments. Fragile vegetation is trampled, new trails are created, soils are compacted, limbs are stripped from trees for campfires, trails widened in moist meadows and tundra, water pollution increases and solitude is often impossible due to some thoughtless visitors.

Developing a wilderness education program will allow local wilderness managers an indirect management approach as an alternative to the seemingly unpopular direct management approach which physically limits users and their freedom to make individual choices. One example of direct management would be to implement the wilderness permit system limiting the number of individuals. Many researchers believe the indirect method of management should be the first choice, benefiting both the user as well as the long-term protection of the resource.

In order to implement a successful program, it is important to first understand the values and benefits of wilderness users and non-users, and to understand past and future trends. This document will discuss several representative surveys providing information on these trends to help managers plan for more than just today's problems. An unprepared program could become ineffective and outdated over time.

Research and innovation are valuable in developing an effective program which can best reach the target audience. The objective is to stimulate thought, and to intrigue individual desire to know more about natural ecosystems, history and the philosophy of wilderness. In the process we must consider social expectations and personal needs for doing good things in Wilderness.

Last of all, creating strong partnerships between outside interest groups and the Forest Service in support of education programs is a proven means of strengthening probability for success. A shared ownership can be developed in managing for the "Desired Future Condition" of Wilderness and the Forest Service's mission. This is an excellent way of improving the Forests' image and building trust with the general public.

DEFINITIONS

Wilderness. The concept of wilderness often has different meanings to different individuals; some understand wilderness to mean designated land under the 1964 Wilderness Act; and others think of it to represent any wild piece of land undeveloped by humans. Wilderness has also been referred to as a "State of Mind" (Nash 1982). More specifically we can define Wilderness as a relatively large natural area that is neither easily accessible nor frequently used by motorized vehicles, where opportunities exist for primitive types of recreation, and past and current human activities are not readily apparent (Driver 1987).

Value. In this document, value is referred to in the sense of an individual or social preference. One thing is held to be better, more desirable, or preferred over another choice (Driver 1987).

Benefit. As used in this document, benefit simply means an improved condition or or a desirable consequence which occurs to either individuals or society (Driver 1987).

Wilderness Management. The planning and formulation of goals, objectives, policies, standards, and field actions for individual wilderness areas. Intent of wilderness management is to preserve naturalness and solitude (Hendee 1978).

Direct management consists of rules, regulations and permits that regulate the places, the users, the number of people in a party, the amount of time spent in the Wilderness, or the number of people in an area.

Indirect management techniques are used to modify behavior to encourage the least amount of impact on the environment and other users. Objective is to shift use patterns and alter visitation behavior, yet allowing freedom of decision to the visitor. Examples include a Wilderness Information System (WIS) or outdoor leadership schools (Lucas 1982, Hendee 1978).

Interpretation. Defined best by Freedman Tilden (from the Arizona Sonora Desert Museum) as "Revelation based on information". Good interpretation will: use sensory techniques; involve the audience; humor the audience; develop a theme; organize and deliver a story; provide comparison and contrast; provide a positive experience; show enthusiasm; balance antidote and fact; and provide accurate information (Austin 1981).

Strategic Planning. "Is the process of maintaining a strategic fit between the organization's goals and capabilities and its changing market opportunities" and "should involve all levels of the organization" (Syme 1987).

Marketing Strategies. "Describe how the organization will achieve its objectives and goals, and consists of plans for matching the existing and potential offerings with the needs of it's target markets" (Syme 1987).

LITERATURE REVIEW

This section provides background information on the personal values of wilderness users and nonusers, and the processes researchers and managers have found to be most effective in developing successful wilderness educational programs.

What do researchers know about the opinions of wilderness users and nonusers in Arizona and elsewhere?

The wilderness opinions and preferences of a large randomly selected, general voting population in Arizona were surveyed by the Bureau of Land Management (BLM) in 1982, and were evaluated by Professor Virden from Arizona State University in 1990. Results of this study were derived from those questionnaires returned by 65 percent of the sample. A large percentage (89%) reported having some knowledge of Wilderness' purpose prior to receiving the questionnaire.

Virden found significant differences between users and nonusers of wilderness concerning: 1) the perceived purpose of wilderness and its' protection, verses grazing in wilderness; 2) funding preferences such as voluntary gifts versus user fees; 3) wilderness information sources, nonusers were more dependant upon the media; 4) users favoring the need for expansion; and 5) users were typically

males (56.9%), 39 or younger, with more education, and nonusers were typically over the age of 40.

Similarity support was found for wilderness users and nonusers alike toward: 1) the importance of wilderness for nonconsumptive public land uses such as the protection of wildlife, outdoor recreation, and wilderness itself; and 2) purposes of wilderness for the protection of wildlife, water quality, plants, natural lands and air quality. Interestingly, both outdoor recreation and research were found less important on the list of purposes of wilderness for users and nonusers. The users found recreation to be slightly more important than the nonusers.

Virdens' study confirms that wilderness preservation is not only important to wilderness users, but is held in high esteem by nonusers as well.

A general study conducted for the National Park Service as a nationwide random telephone survey found the following results:

- Minorities are less apt to visit federal lands.
- Individuals most likely to visit federal lands are young males living in the west, college graduates and/or with an average household income over \$50 thousand per year.
- Areas most likely targeted for visitation are relatively close to home.
- Participants often did not know the difference between National Parks and National Forest lands.

Freedom, escape and spontaneity, has been identified as important experiences to many wilderness users. A study by Stankey (1973) found that 81 percent of visitors to four wilderness areas were opposed to permit systems that regulate hiking and camping. Lucas's survey in 1980 also reported two thirds of visitors surveyed in eight wildernesses in Montana and Idaho were against regulations of prohibiting fires (Anderson 1989). Many researchers agree public opinion is more positive towards "indirect" practices than "direct" management practices (Bury and Fish 1980).

What are the recreation use trends in Wilderness, past and future?

Understanding past and future trends in wilderness is a must for managers in developing a successful education program. Managers can then effectively prepare for new issues and challenges as competition for various recreation uses increase.

Most researchers agree that recreation use of designated wilderness areas was rapidly growing in the mid 1960's and 70's, followed by a decreased level of use in the late 1970's and early 80's. Rationale for this is believed to be associated with individual constraints in leisure time, the price of fuel, and changing interests and preferences (Hendee, et al., 1990).

Since 1981, evidence has shown a gradual increase in recreation wilderness use of less than one percent per year (Cordell, et al., 1989). A 1989 nationwide telephone survey of managers in more than fifty percent of the wilderness areas supported evidence of this trend (Reed, et al., 1989). Wilderness recreation is now believed to account for five percent of the total National Forest System recreation use (Cordell, et al., 1989).

General recreation trends determined by the Forest Service RPA assessment, and Cordell (1989), which are also believed to effect wilderness include:

- A general growing trend in outdoor recreation nationwide.
- Recreation uses will increase within short distances from home.
- Overnight visits will be a little over 2 days.
- Recreation activities growing in national interest which may involve wilderness include:
 - 1) day hiking and hiking for pleasure.
 - 2) wildlife viewing and photography.
 - 3) visiting historical sites.
 - 4) backcountry skiing.
 - 5) picnicking.
 - 6) stream and lake swimming
 - 7) family gatherings.

What individual and social benefits occur in wilderness?

Managers and researchers are increasingly interested in understanding individual and social benefits of wilderness uses in hopes of resolving management problems involving impacts to the wilderness. Understanding these benefits are also believed essential in developing an effective wilderness education program.

Researchers Driver and others (1987) from the Rocky Mountain Forest and Range Research Station in Fort Collins, developed a "Taxonomy of Wilderness Benefits". Driver (1987) found six central values to be representative of the core "wilderness philosophy". They include:

- 1) Preservation of Natural Ecosystems and maintenance of species diversity.
- 2) Spiritual values (natural cathedrals or Native American beliefs).
- 3) Esthetic values (beyond natural beauty to sublime).
- 4) Inherent/intrinsic values (nonhuman organisms and their place on earth).
- 5) Historic and current cultural values (freedom, national pride).
- 6) Specific recreation uses (self sufficiency, challenge, therapeutic).

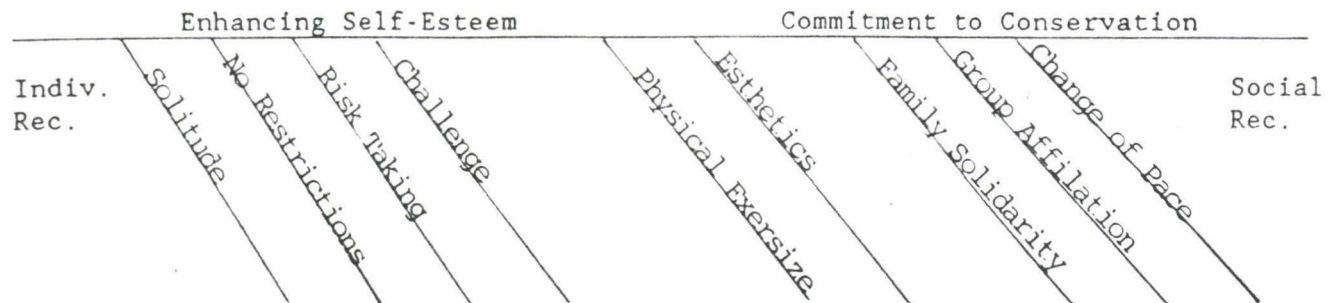
Driver and others (1987) concluded "although research is needed on all benefits, greater attention is particularly needed on the six central values, even though they are the most difficult to quantify".

The Benefit Based Approach (BBA) to understanding and managing for primitive recreation or wilderness benefits involves managing for "benefit opportunities", rather than just "activity opportunities" (Allen 1991 and Driver et al. 1991).

Inventories of local wilderness recreation benefits can be used to determine the appropriateness of uses within the wilderness and the possibility for managers to market other suitable forest lands to meet the users' desired, expected experience. In other words, off-set or counter-balance recreational uses outside designated wildernesses.

Demand for primitive outdoor recreation experience is represented in Figure 1 as a spectrum ranging from the primitive experience of solitude to an experience of social recreation.

Figure 1. Desired Level of Primitive Experience (Adapted from Allen, 1991).



Desired experiences on the individual recreation side of the spectrum meet recreational benefit opportunities which are more suitable for wilderness areas. Experience on the social recreation side of the scale are often not dependant upon wilderness, and therefore, can be managed for outside wilderness. Once the benefits and desired experiences are better understood by the manager, information and interpretation can be provided to the public to help reduce impacts within the wilderness. Primitive or semi-primitive areas may also need to be increased outside wilderness areas.

What do we know about the effectiveness of environmental education programs and methods?

Few studies have documented the effectiveness of education programs in communicating information and influencing behavior of wilderness users (Lucas, 1984). Outward Bound programs have reported wilderness education effectiveness in the areas of self-concept and improved social relations, although, not in the area of wilderness ethics and philosophy (Vogl's 1990). Oye (1984) found that an educational program consisting of a slide show and demonstration increased students knowledge but it did not change their attitudes. Other studies have been conducted on what methods of communication have been most effective, and what influences human behavior in general (Anderson 1989).

Methods of communication in education programs which have been found to be most effective include: problem solving and discovery, active participation, personal contact by field rangers, and audio visual programs (Frazio, 1978, 1979 and Schwaab 1981). Frazio and Polovitz (1979) found brochures not to be as effective as direct contact methods. Olson, Bowman and Roth (1979) found signs less effective than brochures and personal contacts. Messages also must reach the

target audience and be perfectly clear to avoid misunderstandings (Anderson 1989).

A study analyzing human behavior, and what influences such behavior, was conducted by social scientist Fishbein Ajzen in 1975. The findings of his study concluded a person's beliefs, attitudes, and intentions are the factors which influence that person's resulting behavior. Therefore, in order to build an effective program in wilderness we must understand why a certain behavior occurs in wilderness, what are the users' beliefs, attitudes, and intentions, and how can we influence desirable changes.

A study of wilderness management techniques in the southwest, by Robertson (1986), revealed a number of educational programs in place at various Ranger Districts. Programs included "in town programs" of slide shows, presentations and visual displays, "trailhead programs" of signing information, and "wilderness ranger programs" of presence in the field. Most of the 40 districts surveyed had some type of program to reach individual wilderness users, although, very few districts had comprehensive programs involving all of these educational techniques. Overall the "indirect" management approach to managing wildernesses was most often practiced. Robertson concluded in her report that a "needs assessment" should take place on districts having low-key educational programs. Also, districts should look for innovative ideas and technology transfer methods regarding educational program potentials. She also recommended the need for a systematic evaluation of visitor education programs to determine their effectiveness.

In summary, an effective educational program in wilderness must reach the target audience, have clearly defined messages, utilize the more effective methods of education, and be strategically planned and located. Using more than one method is most effective in getting the desired message across to the users.

METHODS AND RESULTS

The following section documents the development of a strategically planned wilderness awareness program for the Coconino National Forest. Methods used include the selection of a preferred alternative, the review of a wilderness value survey and it's results, and the development of an educational marketing plan outline for the preferred alternative. Emphasis is placed on the survey conducted by the author to provide information of the wilderness user in Northern Arizona, and information of their values, and benefits received from their visits to the wilderness.

Alternative Selection

As determined by Robertson (1986) in her study of "Wilderness Management in the Southwest", many different approaches to wilderness education are used by managers to inform the public on "Low Impact Uses". Funding and personnel constraints have often been the limiting factor in developing the full array of educational programs providing for technology transfer, both internally and

externally. Four alternatives are considered as different combinations and approaches to implementing an effective wilderness education program. Alternative E is the preferred alternative selected according to the evaluation criteria.

Alternatives considered:

A. No Action. - No changes would be proposed under this alternative. New indirect management techniques and programs encouraging "No-trace" would not be implemented.

B. Structured Educational Programs. - This alternative focuses on the development of structured wilderness education programs for the public and Forest Service personnel. The external programs would be developed for schools, local clubs, special interest groups, and outdoor leadership classes. Coordination and partnerships with local academic institutions, and within the forest, would be necessary to implement this alternative. Internal educational programs would involve all resource disciplines.

C. Interpretation and Information Sharing Programs. - The focus of this alternative is to provide wilderness education information to the public through "Revelation based on Information" or interpretive services. Ultimately, this program would influence attitudes and appropriate behavior for wilderness users as well as nonusers. Interpretive displays, programs, and brochures would be provided in key locations such as visitor centers, district offices, ski area lodges, recreational centers, Chamber of Commerces, and various sporting goods stores. Coordination would be necessary forestwide and in Northern Arizona to be most effective.

D. Information, Regulation and Signing. - This alternative focuses on information and education in the field. Implementing an effective program that gets the "No Trace" message directly across to the user would involve both signing and wilderness ranger presence. Emphasis would be directed to the Wilderness Information System (WIS) programs, and backcountry rangers making personal contacts and enforcing regulations through the "Authority of the Resource" concepts. Trailhead signing utilizing interpretive techniques would be implemented at each of the major trailheads along with WIS volunteer ranger presence.

E. Implement the Combination of Alternatives B, C and D. - As the preferred alternative, this program would incorporate all of the above-mentioned programs and emphasis areas. Implementation would be phased in over time. Cost of implementing a full array of educational methods would be substantial, given personnel needs and development costs. Partnerships would help to reduce overall costs. A program coordinator would be necessary to initiate the program, and to monitor and evaluate the effectiveness of the program on a continuing basis.

Evaluation criteria used:

1. Effectiveness based on research analysis.
2. Economic value of implementation. (Indirect vs Direct Management cost).
3. Support of the agency and other managers.
4. User satisfaction and support of the program.
5. Nonuser satisfaction or benefits.
6. Coincide with needs determined by future trends.
7. Meets Coconino National Forest LMP and mission, goals and objectives.
8. Potential partnerships.
9. Can effectiveness of the program be monitored?

Discussion of Evaluation Criteria for Alternative E

1. Effectiveness based on research analysis.

Based on the literature review, a combination of educational programs (Alternative E), developed with skilled methods of communication, would be most successful in getting the messages of "Low Impacts" and "Wilderness Philosophy" across to target audiences.

2. Economic considerations of indirect vs direct management.

Direct management would require the cost of planning and implementing such items as permit systems, increased law enforcement, and possible closures. The cost of implementing educational programs in Alternative E will initially cost more, although short term costs should not be the deciding factor in preparing for long term success. Implementing a cost effective program is most important.

3. Support of the agency and its personnel.

Internal support for Alternative E is evident as some of these programs have independently been implemented on the Forest. These programs have never been brought together on the Forest as a coordinated program for Northern Arizona.

4. User satisfaction and support of the program.

An indication of user satisfaction and support for the proposed programs has been tallied in the "Wilderness Value Survey" as discussed later in this document.

5. Nonuser satisfaction or benefits.

Nonuser satisfaction or benefits shall result if success is achieved in preserving the wilderness. Virdens' survey indicates strong support of wilderness values by nonusers. Many nonusers may enjoy interpretive displays and programs which teach them more about the philosophy of wilderness and how it must be preserved.

6. Coincide with needs determined by future trends.

Future trends indicate recreation is growing in national interest. This tells us we need to be pro-active in protecting the wildernesses and managing for increased interests. Alternative E best meets this objective.

7. Meets Coconino National Forest LMP, mission, goals and objectives.

Alternatives B, C, D and E all meet direction within the Forest Land Management Plan and work towards accomplishing our mission, goals and objectives. Alternative E provides the most complete education program in support of protecting Wilderness while providing for the enjoyment of the public.

8. Potential for partnerships.

The preferred alternative allows for development of the greatest number of partnerships. This is believed to help the Forest Services' mission, and it's image with the public.

9. Can effectiveness of the program be monitored?

Monitoring the effectiveness of Alternative E's cumulative program will be the most complicated and it will take time for results to become obvious. For this reason, individual program monitoring will need to be an ongoing process. Limits of Acceptable Change monitoring will help monitoring of results in the field.

Marketing Plan for Wilderness Awareness

Developing a strategically planned marketing program for wilderness education on the Coconino National Forest will help us as managers to achieve our mission, goals and objectives. This process is outlined in a series of steps examining the market environment, including: 1) the forest mission, goals and objectives; 2) marketing research; 3) the situation analysis of external and internal influences; and 4) formulation of a marketing strategy to reach specific objectives.

Mission, Goals and Objectives

Our Forest Service motto is "Caring for the Land and Serving the People". Our mission expands on this by saying it will: "...provide a sustained flow of renewable resources -- outdoor recreation, forage, wood, water, wilderness, wildlife, and fish -- in a combination that best meets the needs of society now and in the future..." The Coconino National Forest Land Management Plan supports this mission as "providing for a quality experience for the public while protecting the watershed, resources, visuals, and primitive character of the wildernesses".

Our goal is to protect the wilderness in it's natural character, unimpaired for future generations and for the gathering and dissemination of information regarding their use and enjoyment as wilderness. The objective of implementing an awareness program is to inform the target audience (wilderness users, potential users, and nonusers) about: wilderness uses as set forth in the 1964 Wilderness Act; and an understanding of how to avoid or ameliorate impacts from occurring. Ultimately, the desired objective is to develop individual's appreciation for wilderness and its philosophy, and to influence attitudes to promote desirable behavior within wildernesses. Partnerships will be a primary vehicle in achieving our goals and objectives.

Marketing Research - Wilderness Value Survey

In an effort to inventory wilderness users who visit Northern Arizona Wildernesses, and to assess their values, experiences, and expectations, a wilderness value survey was made available at various business locations requesting voluntary participation. Data was collected for this study over a period of a month. The results were finalized in February of 1992. Of approximately 1000 questionnaires distributed to the public through direct mailing lists or made available at targeted business outlets, a ten percent response (105 surveys) were received and analyzed. This survey does not represent a random sample of the Arizona public at large but it is considered to be representative of the concerned recreation wilderness user in Northern Arizona. Given the short duration of availability of this survey and the time of year in which it was conducted, the resulting ten percent response is satisfactory. In order to further validate the results of this survey, the author plans to randomly sample wilderness users in the field during the summer of 1992.

Survey measures:

- 1) Demographics.
- 2) Wilderness areas visited in Northern Arizona and duration of visits.
- 3) Satisfaction of users and their wilderness experience.
- 4) Individual benefits of wilderness.
- 5) General understanding of what wilderness is.
- 6) Level of management desired in wilderness.
- 7) Desire for interpretive/educational programs outside wilderness.

Survey Results

For simplicity of analyzing this survey and the representative nature of this small population sample of 105 concerned wilderness users, only the number of respondents and percent of total are tallied for each question. Questions 5 and 7 concerning individual benefits of wilderness and the desired levels of wilderness management, are graphically illustrated in Exhibit A, and Exhibits B1 through B3. Tables for each of the survey questions can be referenced in the Appendix.

1. Demographics

Based on this survey sample, most respondents were white (90.5%) males (67.6%) from the ages of 31 to 50 years of age (44.8%) with no children at home (60.0%). Individuals generally considered themselves well informed, with significant personal experience in wilderness (85.7%). Sources of wilderness education ranged from magazine publications (62.9%) and wilderness books (46.7%) to college courses (41.0%) and other educational programs (41.0%). Of this 105 sampled, 28.5 percent listed non-wilderness areas or the Grand Canyon as wilderness areas they had visited, indicating these individuals generally do not understand what designated wildernesses are.

2. Wildernesses Visited, Duration, And Means Of Travel

The three most frequently visited wildernesses in Northern Arizona by the sampled population include the Kachina Peaks (41.9%), Sycamore Canyon (26.7%), and Red Rock Secret Mountain (22.9%). This may be contributed to the ease of accessibility for these wildernesses and the historic and social values of each. Reported lengths of stay were broken out into primarily day use (39.0%), overnight use (18.1%), three to five days (23.0%), and more than five days (11.4%). The group sampled was primarily recreation hikers (94.3) with a small number of horseback riders (6.7%), and cross-country skiers (6.7%). An illegal few reported using mountain bicycles and vehicles (3.8%).

3. Satisfaction Of Wilderness Experience

When asked how they would describe their wilderness experience, respondents were most often inspired (53.3%), and secondly satisfied (35.2%). The reasons for inspiration or satisfaction reported was primarily due to the esthetic beauty of the scenery (21.0%). Dissatisfaction was attributed to finding litter (7.6%), cattle (6.7%), presence of crowds (4.8%), and various interruptions such as aircrafts (1.9%), mining (1.0%), and others.

The top 7 reasons for visiting wilderness were:

- 1) Solitude (37.1%)
- 2) Physical challenge (32.4%)
- 3) Beauty/scenery (29.5%)
- 4) Stress reduction and relaxation (28.6%)
- 5) Lack of man's influence (23.8%)
- 6) Enjoyment of nature (21.0%)
- 7) Wildlife and plant viewing (16.0%)

4. Individual Benefits Of Wilderness (Exhibit A)

Individuals were asked to rate a list of seven wilderness experiences on a scale of 1 through 6 to reflect benefits gained during their visits. Bar graphs have been developed for comparison of each. Generally, all of the benefits were found valuable except for Resource Stewardship (voluntary trail maintenance and resource rehabilitation projects, etc.). Stress reduction was most important followed second by physical challenge. These findings appear to reflect the high tendency for recreational values by the individuals sampled.

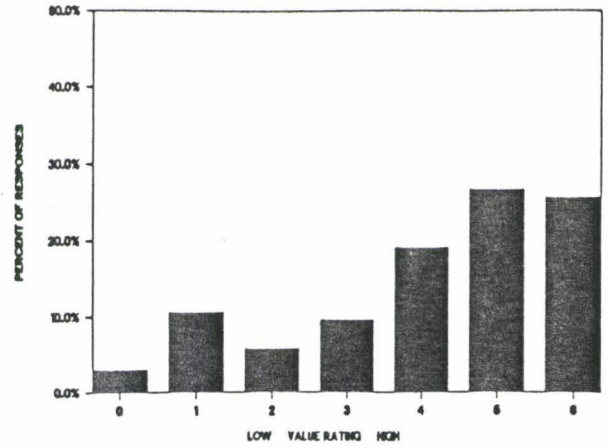
5. General Understanding For Wilderness

Most all respondents agreed wilderness should be managed for "'Quality of Life' for present and future generations " (97.1%), and for "Inherent ecosystem values protected and preserved" (95.2%). Other individuals felt wilderness should also be managed for "Commodity uses, both commercial and individual" (11.4%), and "Economic benefits, both commercial and individual" (11.4%).

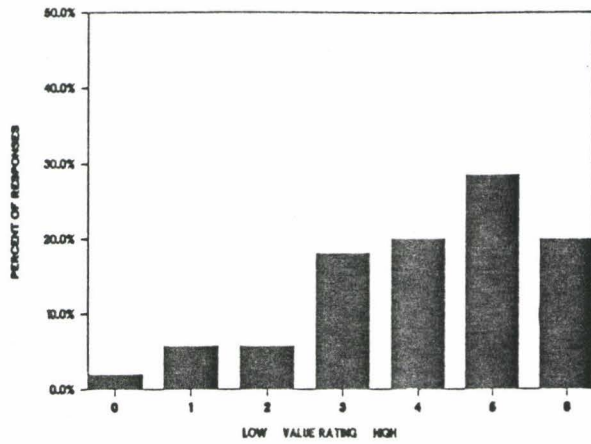
WILDERNESS VALUE SURVEY

Exhibit A Graphs for Question 5 (Reasons for visiting wilderness areas)

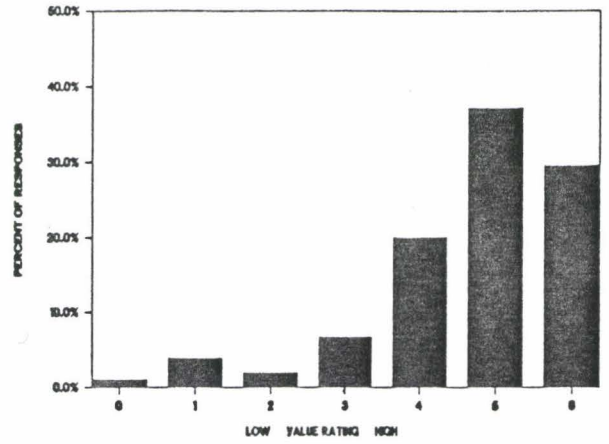
SPIRITUAL REJUVENATION



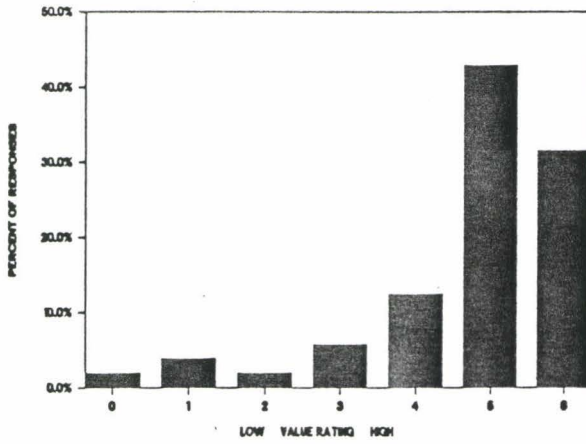
SELF AWARENESS



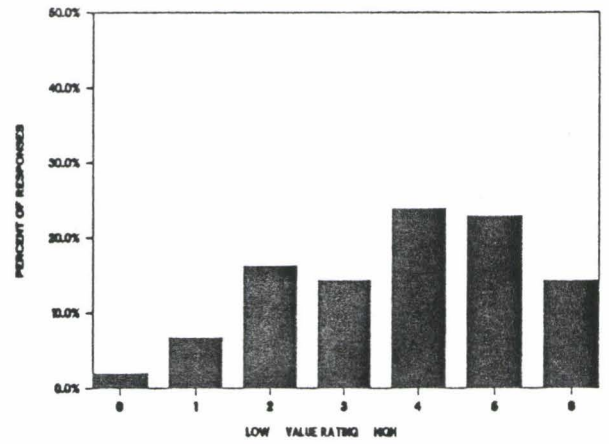
PHYSICAL CHALLENGE



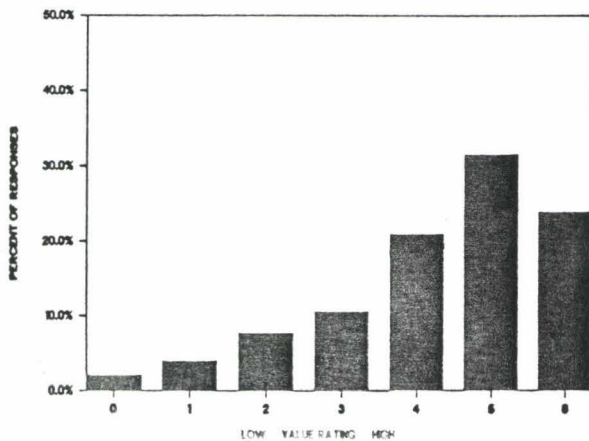
STRESS REDUCTION



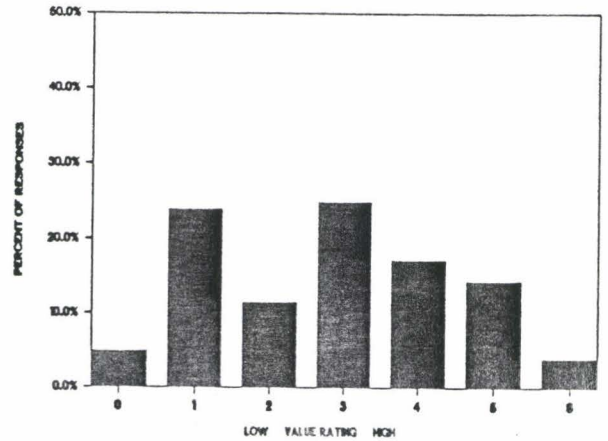
SOCIAL BONDING



ESTHETIC VALUES



RESOURCE STEWARDSHIP



6. Level Of Management Desired (Exhibits B1, B2 and B3)

Participants were asked to identify which items they felt belonged in wilderness and to indicate whether they strongly disagreed, disagreed, were neutral, agreed, or strongly agreed, with the list given. Bar graphs 1 through 16 best illustrate these results. Responses from participants indicate the sampled group is concerned with managing the wilderness in its' most natural state. Results are also summarized in the following categories:

Agree or Strongly Agree with:

- Absence of human influence.
- Low standard trails.
- Areas with no trails.
- Natural forest fires (uncontrolled).
- Visitor solitude.
- Required permits to reduce # of users.
- Groups of less than 15.
- Guide books for wilderness areas.
- Interpretation outside wildernesses.
- Detailed accurate maps.
- Patrol rangers in the backcountry.

Disagree or Strongly Disagree with:

- Interpretive signs in wilderness.
- Use of chainsaws in wilderness.
- Pit toilets.
- Camping in designated campsites.

Neutral or undecided

- Prefer high standard trails.

7. Desired Interpretive/Education Program Messages

A variety of comments were suggested by the participants in reference to their ideas of what a good Interpretive/Education program would be, and how to present it. Many of these comments are most likely tied to programs they have seen and experienced. Additional comments were made of individuals' opinions toward management. Overall there was a strong support for implementing an educational program of wilderness philosophy and ethics. Educational program needs for children, special groups, clubs, and users were referenced in their comments. These comments have been tallied and can be referenced in the Appendix C for Question #8.

In summary this survey provides information of values and benefits of the concerned wilderness users in Northern Arizona. Participation in this survey was strictly voluntary. Support was demonstrated in the written comments for developing a wilderness awareness program. Most common requests for wilderness management included the need for: detailed accurate maps; areas with no trails; natural fires; group size restrictions; interpretation outside the wilderness; and rangers in the backcountry. Required permits was favored, although disagreement was also evident among the responses.

WILDERNESS VALUE SURVEY

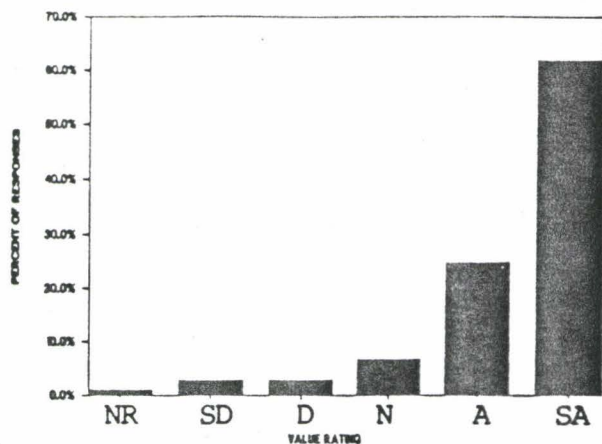
Exhibit B1 Graphs for Question 7 (Management Issues)

LEGEND

NR = No Response
SD = Strongly Disagree
D = Disagree
N = Neutral
A = Agree
SA = Strongly Agree

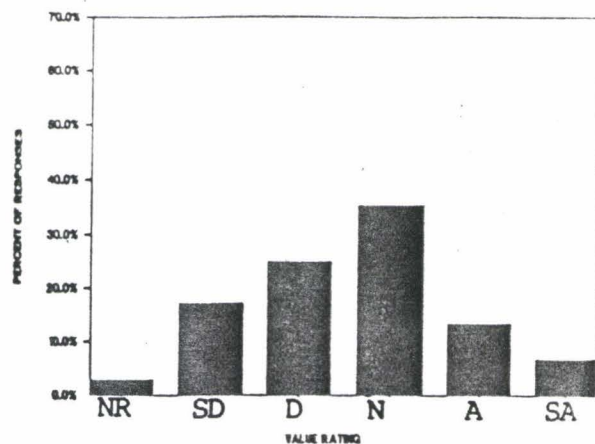
(1)

ABSENCE OF MAN'S INFLUENCE



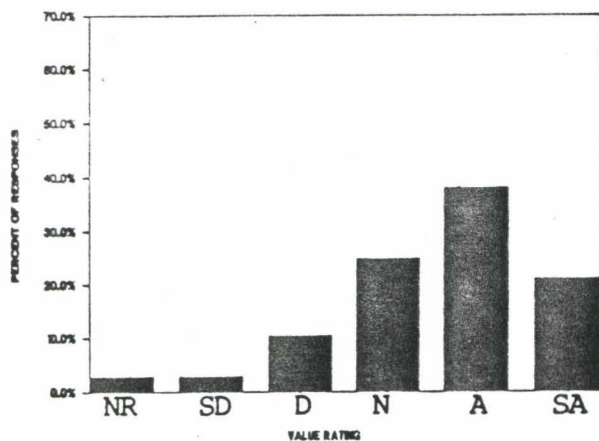
(2)

PREFER HIGH STANDARD TRAILS



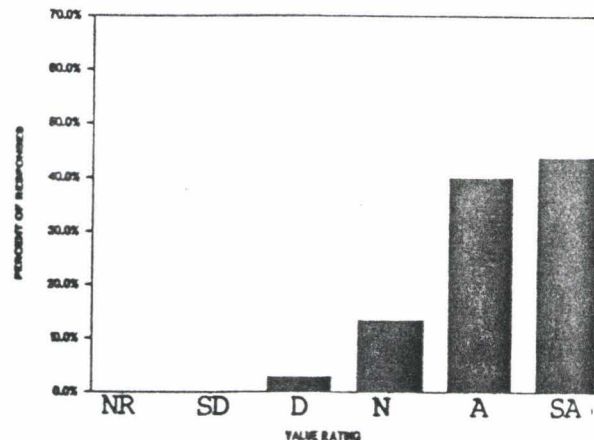
(3)

PREFER LOW STANDARD TRAILS



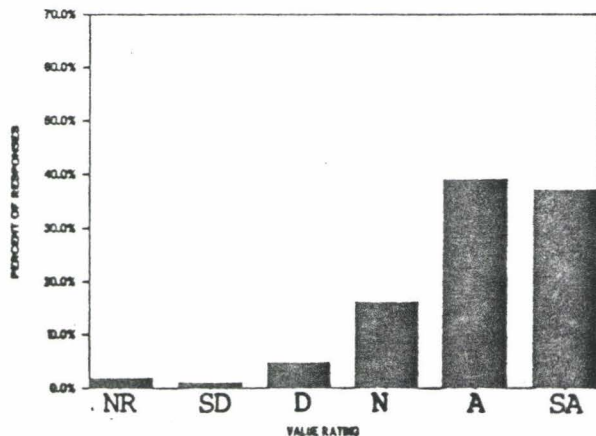
(4)

SOME AREAS WITH NO TRAILS



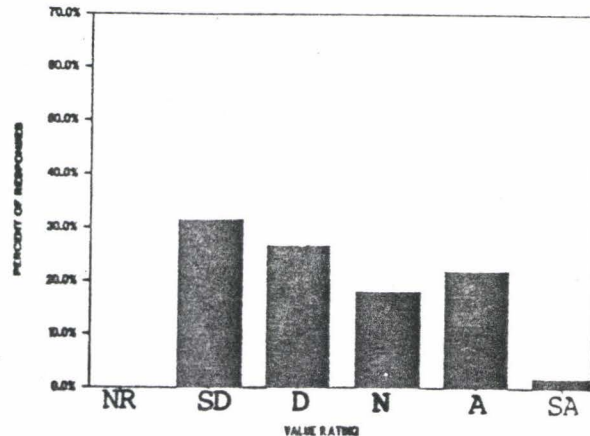
(5)

NATURAL FOREST FIRES (UNCONTROLLED)



(6)

PIT TOILETS IN WILDERNESS AREAS



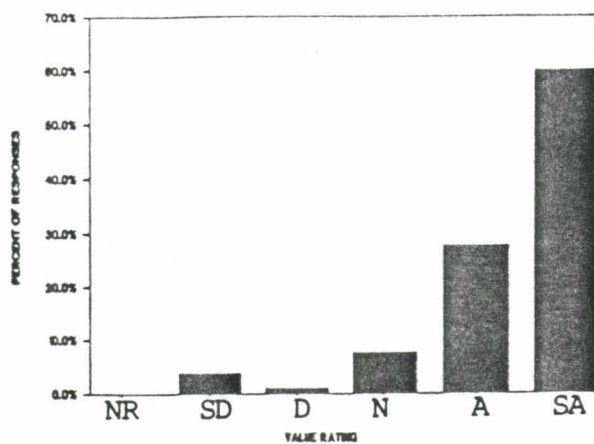
WILDERNESS VALUE SURVEY

Exhibit B2 Graphs for Question 7 (Management Issues)

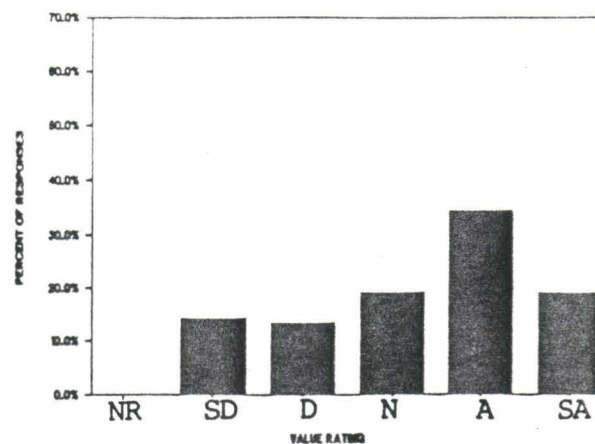
LEGEND

NR = No Response
SD = Strongly Disagree
D = Disagree
N = Neutral
A = Agree
SA = Strongly Agree

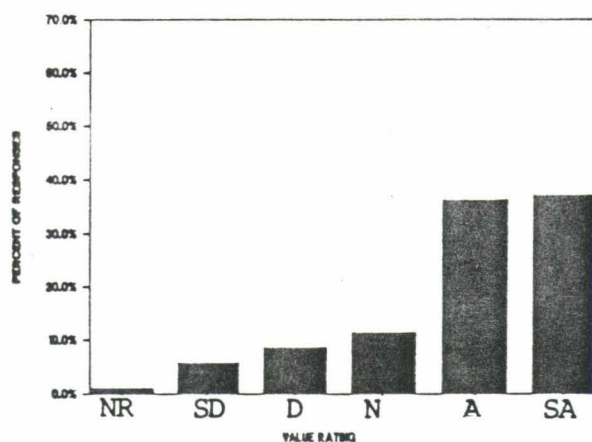
(7) VISITOR SOLITUDE



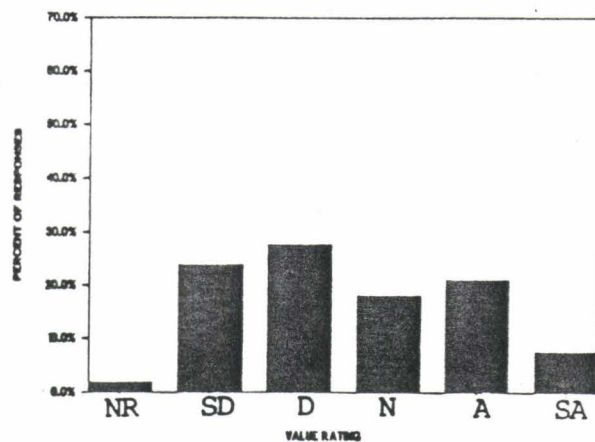
(8) REQUIRED PERMITS TO REDUCE CROWDING



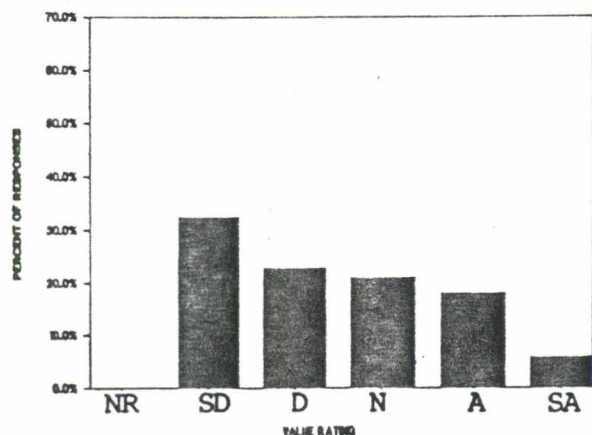
(9) GROUPS OF LESS THAN 15



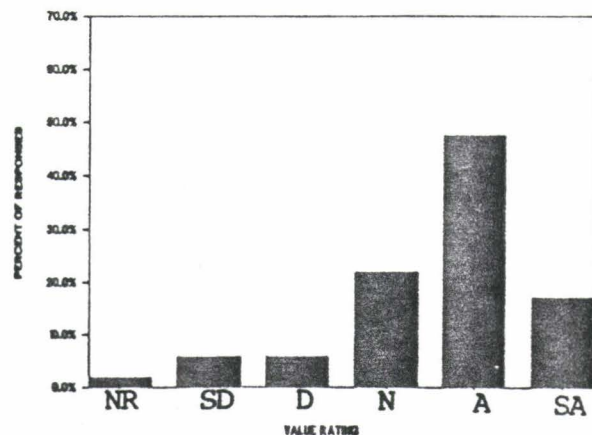
(10) INTERPRETIVE SIGNS IN THE WILDERNESS



(11) USE OF CHAINSAWS IN THE WILDERNESS



(12) GUIDEBOOKS FOR EACH WILDERNESS AREA



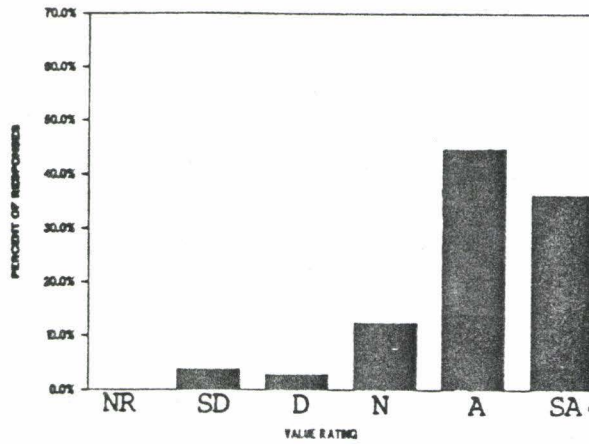
WILDERNESS VALUE SURVEY

Exhibit B 3 Graphs for Question 7 (Management Issues)

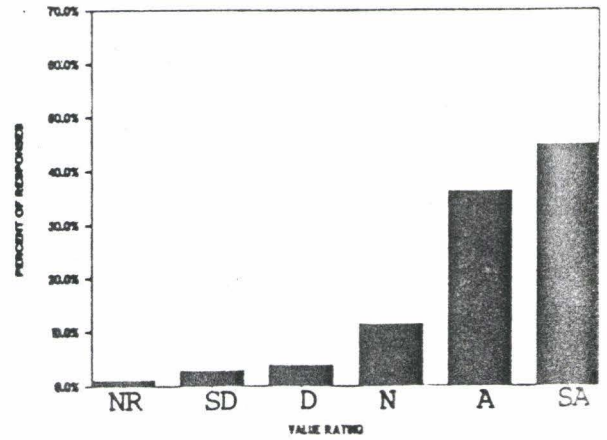
LEGEND

NR = No Response
SD = Strongly Disagree
D = Disagree
N = Neutral
A = Agree
SA = Strongly Agree

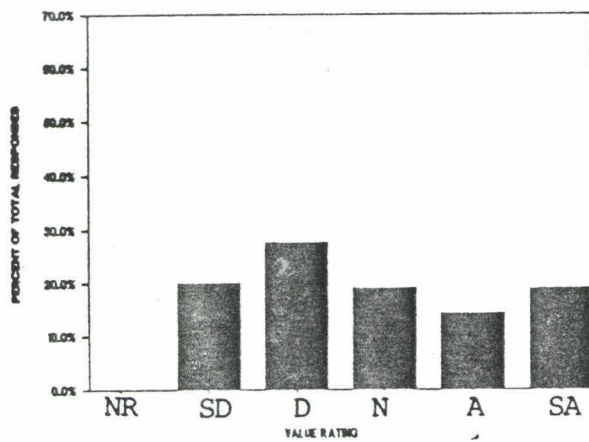
(13) INTERPRETATION OUTSIDE THE WILDERNESS



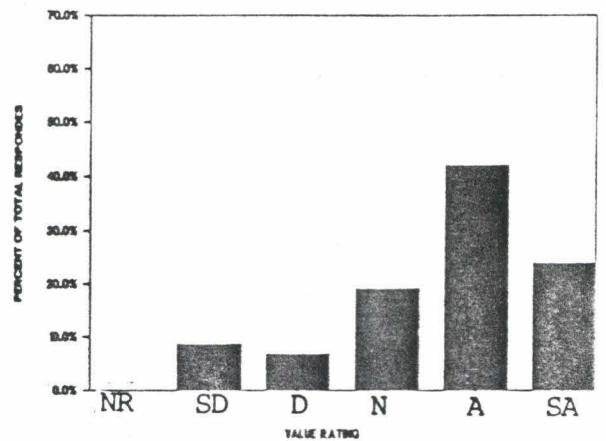
(14) DETAILED, ACCURATE MAPS



(15) CAMPING IN DESIGNATED CAMPSITES ONLY



(16) PATROL RANGERS IN THE BACKCOUNTRY



Situation Analysis

A brief analysis and outline of external and internal influences associated with the proposed alternative's potential for success or failure is considered in the following. This outline format and direction was adapted from the Franklin A. Lewis, Recreation Short Course Study "A Process to Develop a National Forest Recreation Marketing Plan" (1989).

I. External Influences

	<u>Threats</u>	<u>Opportunities</u>
Publics:	Lack of public acceptance of the wilderness program and its intent. Concern that educational programs will commercialize wilderness.	Media and interest groups support of the ed. program. Potential to develop a positive image for FS and its mission.
	Image of the FS and its mission (example: timber harvesting, cattle grazing.)	Partnerships increasing overall support and the effectiveness of the program.

II. Internal Influences

	<u>Strengths</u>	<u>Weaknesses</u>
Human Resources:	Forest expertise in marketing resource programs and knowledge of local publics.	Staff reluctance to accept an educational marketing plan.
		Misunderstanding or lack of marketing experience.
Natural Resources	The sizeable acreage of designated wilderness to manage and protect. Direction of the LMP.	Lack of adequate presence and protection for wildernesses in the field.
Organizational Resources:	Sources of information and education for local publics.	Image of FS protecting resources, and as an education source.
	Potential interpretive outlets. (proposed visitor centers, district offices, etc.	Lack of strong education programs in schools and trained interpreters.
	- Media contacts and partnerships.	

Marketing Strategy

"The marketing strategy is the "Game Plan" by which the forest will reach it's objectives" (Lewis 1989). The marketing strategy for developing the wilderness education program requires the analysis of three areas of marketing, they include: target marketing, positioning, and development of the marketing mix.

Target marketing is determined by breaking the wilderness educational programs into separate units, and then examining the demographics of the target audience, locations for programs, and geographic area of influence.

<u>Educational Programs</u>	<u>Demographic Breakdown</u>	<u>Locations Targeted</u>	<u>Geographical Areas</u>
Wilderness Field Courses.	Age: 18-35 Sex: Males Income: \$10,000+	NAU, Comm. College, ASU, NOLS	Within 150 mi. or 3 hours.
Interpretive Programs, Displays Audio Visual Aids.	Age: 25-50 Sex: Both Income: \$25,000+	Visitor Centers, Ski Areas/other District Offices	Within 100 mi. or 2 hours.
Elementary and J.H. School * Programs.	Grades: 4-8 Sex: Both	Flagstaff, Sedona,	Coconino County (promote other county programs)
Brochures/Maps	Age: 18+ Sex: Both Income: \$10,000+	Visitor Centers, Sales Outlets, Forest Offices	Northern Arizona
Marketing Tools. Patches, Pins, Calendars, etc.	Ages: 10+ 25+ Sex: Both Income: All	Visitor Centers, District Offices, Partnerships.	Northern Arizona
Wilderness Information Systems (WIS) (field programs)	Target all users in the wilderness.	Coconino National Forest wildernesses.	Northern Arizona

* Other grade levels can be targeted in the future based on further analysis.

Positioning involves analyzing the competition of programs already offered and determining what additional programs need to be developed or improved. Programs need to be examined both within and outside the Forest.

What programs are currently offered on wilderness education in Northern Arizona?
What opportunities exist for development or improvement?

1. No academic field wilderness education courses are offered in Northern Arizona at this time. Opportunities include: Northern Arizona University, Coconino County Community Colleges, and National Outdoor Leadership schools.

2. Interpretive displays have not been used for the purposes of wilderness education. No interpretive centers have been developed for the Coconino National Forest or local communities. Opportunities exist to develop interpretive displays at local district offices, ski area lodges, retail outlets, and for future planned visitor centers.
3. Environmental education has been targeted in the schools by: the Resource Center for Environmental Education, Coconino County School programs, and in cooperation with the Coconino National Forest. The only programs on wilderness ethics has been the "Impact Monster" programs conducted by Forest Service personnel. Opportunities for improvement would be to incorporate educational programs on wilderness philosophy, history, natural environments, and our roles as protectors. The "Green Scene" program would help to expand on these areas.
4. Brochures and maps pertaining to specific wilderness areas are minimal. National brochures on "Leave No Trace" and general ROG information is available at each of the Coconino District offices. Opportunity exists to develop detailed topographic maps in conjunction with the importance of wilderness ethics, history, and physical and biological environments.
5. Marketing tools have not yet been implemented on the Coconino National Forest. Planning for such items as "Wilderness Preservation" patches, and pins have been initiated, although not completed. Developing a calendar which would be generic to Arizona is a new option to pursue. Opportunity exists to incorporate our mission and wilderness philosophy.
6. Individual districts have initiated WIS program efforts. Given appropriate funding, programs can be expanded, and quality training can be improved upon.

The marketing mix is made up of a combination of offerings to the target customer while meeting the objectives of the forest. The marketing mix examines: the product, price, place, promotions, participants, physical evidence, and process of service.

Product - is the education programs themselves and how they are presented to the public. (Field courses, interpretive displays, audio-visual programs, school programs, brochures and maps, and WIS programs.)

Price - involves costs to the public for participation in academic programs and the purchase of maps. All other programs would continue be a free service to the customer.

Place - refers to the target locations for each of the proposed programs. (Colleges, field, visitor centers, schools, Forest offices.)

Promotions - will include interpretive displays, interactive computer, patches, pins, calandars, and book sales. Academic programs will need to be promoted through school schedules, brochures, and individual contacts.

Participants - will involve wilderness users, potential users, and nonusers of wilderness.

Physical Evidence - is the total environment surrounding the wilderness education program service. This involves the total program package implemented, for example: the product, its setting, service, and customer satisfaction.

Process - is the procedure of planning the programs' schedule of events, and providing the services.

In summary, a marketing plan package for the wilderness education program has been developed through a series of steps. These steps have included: examining the Forest mission, goals, and objectives; analysis of a market research survey of wilderness users; review of internal and external influences; and the formulation of a marketing strategy or "game plan" to reach the desired objectives.

DISCUSSION AND SUMMARY

Protecting wilderness areas from the impacts of humans while providing for their enjoyment will continue to be a challenge for managers for many years to come. Researchers agree there is no perfect system although indirect management is most favored by both managers and the general public. This document proposes a information sharing program for implementing indirect management techniques as a solution for protecting wildernesses for the future. Other methods may be adopted as needed, although without this program in place, chances for citizens self-regulation and knowledge of appropriate uses will be significantly less.

The objectives of this program have been identified as: the need to inform the target audience of what wilderness is as set forth in the Wilderness Act, and how to avoid or ameliorate impacts from occurring. It is important for individuals to develop an appreciation for wilderness philosophy and share in the responsibility of preserving it for future generations.

An effective program must reach the target audience, have clearly defined messages, utilize advanced methods of technology transfer, and be strategically planned and located. Using more than one method of information sharing is desirable in reaching a variety of different users, potential users and concerned citizens.

Some of the major tools to be used in this program are interpretive services, personal contacts and marketing promotions. It is extremely important for managers to identify talented individuals who can best implement these programs from the start. Selling the program within the organization is also key in developing ownership and guaranteed success. And last of all, it is important to keep this program dynamic through continuous monitoring of our mission and successes and the ability to apply innovation and creativity. Continuous change is encouraged to keep programs on target.

Accomplishments for the protection of Wilderness itself can be monitored over time through the Limits of Acceptable Change (LAC) process.

FUTURE RECOMMENDATIONS:

Additional steps are needed prior to implementation of the proposed program. The following activities will be initiated by the author upon completion of this document.

- A. Development of an Action Plan to determine the strategy for implementation. This will include:
 - 1. Developing individual program needs.
 - 2. Determining who is responsible for these programs.
 - 3. Initial start-up dates and completion dates.
 - 4. Costs of implementing the programs.
 - 5. Monitoring programs.
 - 6. Implement needed change based on monitoring results.
- B. Get the support of frontline individuals early in the process, develop ownership. Provide special interpretive training. Utilize new ideas.
- C. Coordinate efforts Forest-wide to develop program strategies.
- D. Develop critical partnerships for future implementation and funding. Give partners meaningful piece of the management.
- E. Amend LMP spreadsheets to incorporate budget planning and target dates.
- F. Initiate the planning process for interpretive displays, brochures, maps, and audio-visual aids. (Utilize partnerships).
- G. Develop and schedule training programs for special groups and internally.
- H. Actively participate in current Forest environmental educational programs to incorporate wilderness ethics, philosophy, etc.
- I. Field survey conducted by wilderness rangers in the summer of 1992, to validate Wilderness Value Survey results.
- J. Continue current wilderness education programs and improve as needed.

Continued efforts will also be necessary to perfect the proposed programs once implemented.

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APPENDIX

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- B. Wilderness Value Survey Tables - Questions 1-9.
- C. Wilderness Value Survey Individual Comments -Question 8.
- D. Wilderness Value Survey.
- E. Document Process Flow Chart.

APPENDIX A

Wilderness Value Survey - Demographics

WILDERNESS SURVEY
QUESTION 10

<u>RACE</u>	NUMBER RESPONDEE	% OF TOTAL
HISPANIC	2	1.9%
NATIVE AMERICAN	4	3.8%
ASIAN	1	1.0%
BLACK	0	0.0%
WHITE	95	90.5%
OTHER	3	2.9%

WILDERNESS SURVEY
QUESTION 11

<u>DEMOGRAPHICS</u>		NUMBER RESPONDEE	% OF TOTAL
SEX	MALE	71	67.6%
	FEMALE	34	32.4%
AGE	UNDER 18	1	1.0%
	18 TO 25	11	10.5%
	26 TO 30	16	15.2%
	31 TO 50	47	44.8%
	OVER 50	19	18.1%
	NO RESPONSE	11	10.5%
FAMILY	SINGLE	37	35.2%
	MARRIED	53	50.5%
	NO RESPONSE	15	14.3%
CHILDREN AT HOME	NONE	63	60.0%
	1 TO 2	13	12.4%
	3 TO 4	10	9.5%
	OVER 4	2	1.9%
RESPONDEES WITH YOUNG CHILDREN (LESS THAN 5)		9	8.6%

WILDERNESS SURVEY
QUESTION 12

<u>INCOME</u>	NUMBER RESPONDEES	% OF TOTAL
LESS THAN 10,000	12	11.4%
10,000 TO 25,000	26	24.8%
25,000 TO 35,000	20	19.0%
35,000 TO 50,000	22	21.0%
50,000 TO 75,000	12	11.4%
OVER 75,000	8	7.6%
NO RESPONSE	5	4.8%

WILDERNESS SURVEY
QUESTION 13

<u>VACATION TIME</u>	NUMBER RESPONDEE	% OF TOTAL
LESS THAN 2 WEEKS	15	14.3%
2 TO 4 WEEKS	52	49.5%
OVER 4 WEEKS	19	18.1%
NO RESPONSE	19	18.1%

WILDERNESS SURVEY
QUESTION 14

<u>RESIDENCE</u>	NUMBER RESPONDEE	% OF TOTAL
FLAGSTAFF	36	34.3%
PHOENIX	41	39.0%
URBAN	76	72.4%
RURAL	9	8.6%
OUT OF STATE	4	3.8%

APPENDIX B

Wilderness Value Survey Tables - Questions 1-9

WILDERNESS SURVEY
QUESTION 1

1. <u>WILDERNESS VISITED</u>	<u>NUMBER OF RESPONSES</u>	<u>% OF TOTAL</u>
KACHINA PEAKS (FS)	44	41.9%
SYCAMORE CANYON (FS)	28	26.7%
RED ROCK-SECRET MTN (FS)	24	22.9%
GRAND CANYON (NPS-NONDEG)	17	16.2%
KENDRICK MTN (FS)	15	14.3%
BEAVER CREEK (FS)	9	8.6%
WEST CLEAR CREEK (FS)	8	7.6%
PARIA CANYON (BLM)	7	6.7%
STRAWBERRY CRATER (FS)	4	3.8%
MUNDS MTN (FS)	2	1.9%
OTHER NO. AZ. WILDERNESS	10	9.5%
OTHER WILDERNESS	32	30.5%
2. <u>LENGTH OF STAY</u>		
PRIMARILY DAY USE	41	39.0%
OVERNIGHT	19	18.1%
3 TO 5 DAYS	25	23.8%
MORE THAN 5 DAYS	12	11.4%
NO RESPONSE	9	8.6%
3. <u>UNDERSTANDS MEANING OF DESIGNATED WILDERNESS</u>		
LISTED NONWILDERNESS AREAS	18	17.1%
LISTED GRAND CANYON (NPS)	12	11.4%
LISTED ONLY DEG. WILDERNESS	73	69.5%
NO RESPONSE	2	1.9%

WILDERNESS SURVEY
QUESTION 2

1. <u>MODE OF TRAVEL</u>	<u>NUMBER OF RESPONSES</u>	<u>% OF TOTAL</u>
HIKED CARRYING GEAR	99	94.3%
HIKED WITH HORSE	2	1.9%
HIKED WITH LLAMA	1	1.0%
RODE ON HORSEBACK	7	6.7%
GUIDED TRIP	1	1.0%
X-COUNTRY SKIING	7	6.7%
RAFTING	2	1.9%
MTN BIKE (ILLEGAL)	3	2.9%
CAR (ILLEGAL)	2	1.9%
NO RESPONSE	2	1.9%

WILDERNESS SURVEY
QUESTION 3

1. <u>RATING OF PERSONAL WILDERNESS EXPERIENCE</u>	<u>NUMBER OF RESPONSES</u>	<u>% OF TOTAL</u>
SATISFIED	37	35.2%
INSPIRED	56	53.3%
DISAPPOINTED	3	2.9%
DISAPPOINTED AND INSPIRED	15	14.3%
NO RESPONSE	4	3.8%
2. <u>REASONS FOR INSPIRATION OR SATISFACTION</u>		
BEAUTY/SCENERY	22	21.0%
SOLITUDE	10	9.5%
LACK OF MAN'S INFLUENCE	9	8.6%
STRESS REDUCTION/RELAXATION	7	6.7%
WILDLIFE VIEWING	5	4.8%
NATURAL EXPERIENCE	4	3.8%
REMOTENESS	4	3.8%
PHYSICAL CHALLENGE/EXERCISE	4	3.8%
GEOLOGY	2	1.9%
RECREATION	2	1.9%
EDUCATION	1	1.0%
ENVIRONMENTAL HOPE	1	1.0%
SPIRITUAL REJUVENATION	1	1.0%
3. <u>REASONS FOR DISSATISFACTION</u>		
LITTER	8	7.6%
CATTLE/LIVESTOCK	7	6.7%
CROWDS	5	4.8%
NEARBY TIMBERING	4	3.8%
FIRE RINGS	2	1.9%
LACK OF WILDLIFE	2	1.9%
AIRCRAFT	2	1.9%
NEARBY ROADS OUTSIDE AREA	1	1.0%
WILDERNESS TOO SMALL	1	1.0%
INADEQUATE BUFFER	1	1.0%
AIR POLLUTION	1	1.0%
DOGS	1	1.0%
NEARBY JEEP TOURS	1	1.0%
LACK OF MULTIPLE USE	1	1.0%
NOT AS GOOD AS COLORADO	1	1.0%
SNOWMOBILERS	1	1.0%
EXCESSIVE NOISE	1	1.0%
FENCES	1	1.0%
ROADS IN THE WILDERNESS	1	1.0%
MINING ACTIVITIES	1	1.0%

WILDERNESS SURVEY
QUESTION 4

REASONS FOR VISITING
WILDERNESS AREAS

	NUMBER RESPONSES	% OF TOTAL
SOLITUDE	39	37.1%
PHYSICAL CHALLENGE/EXERCISE	34	32.4%
BEAUTY/SCENARY	31	29.5%
STRESS REDUCTION/RELAXATION	30	28.6%
LACK OF MAN'S INFLUENCE	25	23.8%
ENJOYMENT OF NATURE	21	20.0%
WILDLIFE/PLANT VIEWING	16	15.2%
SELF AWARENESS	8	7.6%
SPIRITUAL REJUVENATION	7	6.7%
RECREATION	6	5.7%
TIME WITH FRIENDS OR FAMILY	6	5.7%
QUIET	6	5.7%
HIKING	6	5.7%
SELF AWARENESS	5	4.8%
REMOTENESS	5	4.8%
ARCHEOLOGICAL/HISTIRICAL FEATURES	5	4.8%
HUNTING/FISHING	5	4.8%
EXPLORATION/ADVENTURE	4	3.8%
CONVENIENCE OF WILDERNESS AREA	3	2.9%
LACK OF VEHICLES	3	2.9%
PHOTOGRAPHY	3	2.9%
WEATHER	3	2.9%
CAMPING	2	1.9%
GEOLOGY	1	1.0%
CURIOSITY	1	1.0%
GOOD TRAILS IN WILDERNESS AREA	1	1.0%
WALKING THE DOG	1	1.0%
CUTTING FIREWOOD (ILLEGAL)	1	1.0%
HORSEBACK RIDING	1	1.0%

WILDERNESS SURVEY
QUESTION 5 (VALUE RATING)

TOTAL NO RESPONSES
105

	SPIRITL REJUVEN	SELF AWARENSS	PHYSICAL CHALLENGE	STRESS REDUCTION	SOCIAL BONDING	ESTHETIC VALUES	RESOURCE STEWARD
AVERAGE	4.14	4.14	4.70	4.77	3.77	4.34	2.84
COUNT							
0	3	2	1	2	2	2	5
1	11	6	4	4	7	4	25
2	6	6	2	2	17	8	12
3	10	19	7	6	15	11	26
4	20	21	21	13	25	22	18
5	28	30	39	45	24	33	15
6	27	21	31	33	15	25	4
PERCENT							
0	2.9%	1.9%	1.0%	1.9%	1.9%	1.9%	4.8%
1	10.5%	5.7%	3.8%	3.8%	6.7%	3.8%	23.8%
2	5.7%	5.7%	1.9%	1.9%	16.2%	7.6%	11.4%
3	9.5%	18.1%	6.7%	5.7%	14.3%	10.5%	24.8%
4	19.0%	20.0%	20.0%	12.4%	23.8%	21.0%	17.1%
5	26.7%	28.6%	37.1%	42.9%	22.9%	31.4%	14.3%
6	25.7%	20.0%	29.5%	31.4%	14.3%	23.8%	3.8%

WILDERNESS SURVEY
QUESTION 6

VALUES TO MANAGE FOR	# OF YES RESPONSES	% OF TOTAL
QUALITY OF LIFE	102	97.1%
COMODITY USE	12	11.4%
ECONOMIC BENIFITS	12	11.4%
ECOSYSTEM PROTECTION	100	95.2%

WILDERNESS SURVEY
QUESTION 7

TOTAL NO RESPONDEE
105

	ABSENCE OF MAN	HI STD TRAILS	LOW STD TRAILS	AREAS W/ NO TRAILS	NATURAL FOR FIRE	PIT TOILET	VISITOR SOLITUDE
AVERAGE	4.37	2.59	3.55	4.25	3.97	2.36	4.2
COUNT							
NO RESPONSE	1	3	3	0	2	0	3
DISAGREE (1)	3	18	3	0	1	33	4
DISAGREE (2)	3	26	11	3	5	28	1
NEUTRAL (3)	7	37	26	14	17	19	8
AGREE (4)	26	14	40	42	41	23	29
AGREE (5)	65	7	22	46	39	2	63
PERCENT							
NO RESPONSE	1.0%	2.9%	2.9%	0.0%	1.9%	0.0%	0.0%
DISAGREE (1)	2.9%	17.1%	2.9%	0.0%	1.0%	31.4%	3.8%
DISAGREE (2)	2.9%	24.8%	10.5%	2.9%	4.8%	26.7%	1.0%
NEUTRAL (3)	6.7%	35.2%	24.8%	13.3%	16.2%	18.1%	7.6%
AGREE (4)	24.8%	13.3%	38.1%	40.0%	39.0%	21.9%	27.6%
AGREE (5)	61.9%	6.7%	21.0%	43.8%	37.1%	1.9%	60.0%

WILDERNESS SURVEY
QUESTION 7 (CONTINUED)

TOTAL NO RESPONDEE
105

	REQUIRED PERMITS	SMALL GROUPS	INTERP SIGNS	USE OF CHAINSAWS	AREA GUIDE BK	INTERP OUTSIDE	DETAIL MAPS
AVERAGE	3.30	3.88	2.55	2.42	3.59	4.07	4.13
COUNT							
NO RESPONSE	0	1	2	0	2	0	1
DISAGREE (1)	15	6	25	34	6	4	3
DISAGREE (2)	14	9	29	24	6	3	4
NEUTRAL (3)	20	12	19	22	23	13	12
AGREE (4)	36	38	22	19	50	47	38
AGREE (5)	20	39	8	6	18	38	47
PERCENT							
NO RESPONSE	0.0%	1.0%	1.9%	0.0%	1.9%	0.0%	1.0%
DISAGREE (1)	14.3%	5.7%	23.8%	32.4%	5.7%	3.8%	2.9%
DISAGREE (2)	13.3%	8.6%	27.6%	22.9%	5.7%	2.9%	3.8%
NEUTRAL (3)	19.0%	11.4%	18.1%	21.0%	21.9%	12.4%	11.4%
AGREE (4)	34.3%	36.2%	21.0%	18.1%	47.6%	44.8%	36.2%
AGREE (5)	19.0%	37.1%	7.6%	5.7%	17.1%	36.2%	44.8%

WILDERNESS SURVEY
QUESTION 7 (CONTINUED)

TOTAL NO RESPONDEE
105

	REQUIRED PERMITS	SMALL GROUPS	INTERP SIGNS	USE OF CHAINSAWS	AREA GUIDE BK	INTERP OUTSIDE	DETAIL MAPS
AVERAGE	3.30	3.88	2.55	2.42	3.59	4.07	4.13
COUNT							
NO RESPONSE	0	1	2	0	2	0	1
DISAGREE(1)	15	6	25	34	6	4	3
DISAGREE(2)	14	9	29	24	6	3	4
NEUTRAL (3)	20	12	19	22	23	13	12
AGREE (4)	36	38	22	19	50	47	38
AGREE (5)	20	39	8	6	18	38	47
PERCENT							
NO RESPONSE	0.0%	1.0%	1.9%	0.0%	1.9%	0.0%	1.0%
DISAGREE(1)	14.3%	5.7%	23.8%	32.4%	5.7%	3.8%	2.9%
DISAGREE(2)	13.3%	8.6%	27.6%	22.9%	5.7%	2.9%	3.8%
NEUTRAL (3)	19.0%	11.4%	18.1%	21.0%	21.9%	12.4%	11.4%
AGREE (4)	34.3%	36.2%	21.0%	18.1%	47.6%	44.8%	36.2%
AGREE (5)	19.0%	37.1%	7.6%	5.7%	17.1%	36.2%	44.8%

WILDERNESS SURVEY
QUESTION 7 (CONTINUED)

TOTAL NO RESPONDEE
105

	DEG CAMPSITES	PATROL RANGER
AVERAGE	2.85	3.66
COUNT		
NO RESPONSE	0	0
DISAGREE(1)	21	9
DISAGREE(2)	29	7
NEUTRAL (3)	20	20
AGREE (4)	15	44
AGREE (5)	20	25
PERCENT		
NO RESPONSE	0.0%	0.0%
DISAGREE(1)	20.0%	8.6%
DISAGREE(2)	27.6%	6.7%
NEUTRAL (3)	19.0%	19.0%
AGREE (4)	14.3%	41.9%
AGREE (5)	19.0%	23.8%

WILDERNESS SURVEY
QUESTION 8B

DESIRED MANAGEMENT/PROGRAMS	NUMBER RESPONSES	% OF TOTAL
DETAILED MAP	9	10.6%
DEREGULATE	4	4.7%
BROCHURES	3	3.5%
POINT OUT SPECIAL AREAS	2	2.4%
DISPLAYS	2	2.4%
NEWSPAPER ADDS	2	2.4%
REQUIRED PRE-ENTRY EDUCATION	1	1.2%
NO MAPS!	1	1.2%
SLIDESHOWS	1	1.2%
BOOKS	1	1.2%
KID PARPHENALIA	1	1.2%
TALKS TO CLUBS	1	1.2%
CLINICS	1	1.2%
RANGERS AS INTERPRETERS	1	1.2%
MUSEUM GUIDED TRIPS	1	1.2%
ISSUE MORE CITATIONS	1	1.2%
KEEP INTERPRETATION OUT	1	1.2%
DO NOT ADVERTISE	1	1.2%
ECOTOURISM	1	1.2%

WILDERNESS SURVEY
QUESTION 9

SOURCE OF WILDERNESS EDUCATION	NUMBER RESPONSES	% OF TOTAL
COLLEGE COURSES	43	41.0%
EDUCATIONAL PROGRAMS	43	41.0%
MAGAZINE PUBLICATIONS	66	62.9%
WILDERNESS BOOKS	49	46.7%
MEDIA	37	35.2%
FRIENDS OR FAMILY	49	46.7%
PERSONAL EXPERIENCE	90	85.7%
OTHER	23	21.9%

APPENDIX C

Wilderness Value Survey Comments - Question 8

QUESTION #8 : What message would you like to see the Forest Service or other organizations relate to the public about Wilderness values, history, and ethics? What kind of educational programs, brochures and interpretive displays do you feel would be most beneficial in accomplishing this effort?

The following symbols represent the frequency of the comment and not necessarily the most important comment:

- *** Most often mentioned concern or comment.
- ** Often mentioned concern or comment.
- * Concern mentioned more than twice.

Comments and Concerns For Educational Programs.

- *** - "Leave No Trace", "Take Only Memories".
- *** - Control of litter in the wilderness.
- *** - Respect and responsibility for natural systems.
- *** - Non-consumptive uses only (no grazing).
- ** - Intrinsic/Inherent values - irreplaceable.
- ** - Physical environment - geology, plants, animals.
- ** - Our ties to nature, our lives - future and past (history and heritage).
- ** - Reasons for wilderness - preservation (bio-diversity, genetic-diversity).
- * - "Keep it Wild" (Participate in it - not control it).
- * - Effects of impacts and habitat degradation (comparison contrast).
- * - Prevent intrusions on others, courtesy between users (noise, litter, impacts, rec. uses, etc.).
- Esthetic values (physical resources, wildlife, vegetation).
- Importance of resource to local area.
- God's creation.
- The need for "Wilderness without humans".
- The small percentage of Wilderness left altogether.
- Encourage free thinking and common sense.
- Natural changes in the environment.
- Be truthful with public.

Ideas and support as to how to get these messages across included:

- ** - Provide topographic maps with history and ethics, etc.
- ** - Brochures, displays, audio visual programs, educational programs to schools, groups, and users.
- * - Improve signing outside wildernesses (Trailheads, boundaries, etc.)
- * - Partnerships with outside outlets - sporting stores, Chambers, schools.
- Don't publicize (Let public find out on their own).
- Eco-tourism techniques (encourage non-consumptive uses).
- Adopt Park Service methods of education/interpretation methods.
- Implement permits (use to educate).
- Require education programs prior to entry.
- Children's promotional aids (buttons, stickers, etc.).
- Rangers in the backcountry (utilize volunteers).

General Management Concerns

- *** - Grazing impacts to the wilderness environment and esthetics.
- *** - Litter in the wildernesses (restroom facilities needed at trailheads).
- ** - Image of the Forest Service and general distrust - consumptive managing agency, bias toward non-wilderness mgt., incapable of relating biological values, anti-wilderness agency).

(Continued Question #8 responses)

- * - Manage wilderness areas without people
- * - Need more wilderness areas without people for flora and fauna.
- * - Need more wildernesses to guarantee primitive areas for the future.
- * - "Keep it Wild" - No control or managing.
 - No permits - "Freedom of choice".
 - Need for permit system to control and educate (stronger enforcement).
 - No more improvements, rehabilitate present developments (trails, roads).
 - Improve access to the wilderness (to trailheads).
 - Discourage use, discourage growth of use (No media, TV shows on use).
 - No smoking in wilderness.
 - More surveys.
 - Stop propaganda on successes of grazing or other consumptive uses.
 - Control degradation.
 - Utilize volunteers in backcountry.
 - Recycle opportunities outside wilderness.
 - Expand wilderness boundaries and get rid of roads in the Peaks.

APPENDIX D

Wilderness Value Survey



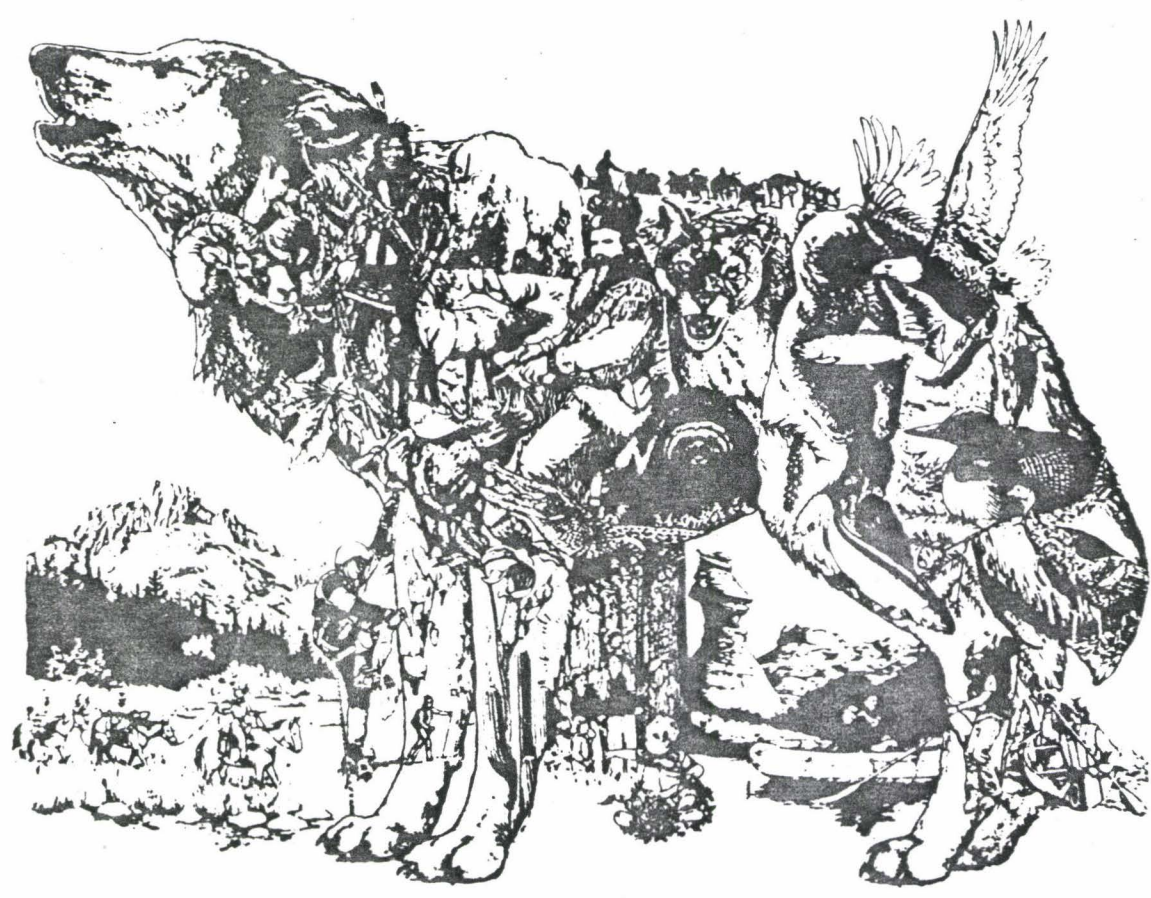
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Attention CUWS
Peaks Ranger District
Coconino National Forest
5075 N. Hwy. 89
Flagstaff, AZ 86004-9930



WILDERNESS VALUE SURVEY

Dear Wilderness Visitor:

Hello! I need your help in gathering some information on how you as a wilderness user view the wilderness and its many attributes. The information you provide will be used to recommend improvements for wilderness education through interpretative services for Wildernesses in Northern Arizona. This is an independent study, authorized by Clemson University. Your answers will be kept confidential and will not be identified with you personally. Your response is important to the success of this study. Thank you for your time!

Instructions:

1. Please answer the following questions. (approximately 10 to 15 minutes)
 2. The completed questionnaire can be mailed by folding the sheets inward exposing the self mailing address and paid postage on the back page of this questionnaire.
-

1. Have you ever visited a designated Wilderness in Northern Arizona?

(Designated Wilderness is an area of undeveloped Federal land set aside by congress which is administered for the enjoyment of the public, scientific research, education, and scenic and historical values, in such a manner that will leave it unimpaired for future generations.)

(Please describe which Wildernesses, when, and the length of your visit)

Name	When	Length of visit
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

2. How did you travel in the wilderness during your visit? (Check all that apply, but if more than one, underline the way you traveled most.)

- () Hiked, carrying our equipment ourselves.
 () Hiked, leading horses, mules, or burros.
 () Hiked, leading llamas.
 () Rode on horseback.
 () Participated on a commercial guided trip.
 () Other (Describe) _____.

3. In general, how would you describe your wilderness experience?

a. Disappointing (), b. Satisfactory (), c. Inspiring (), d. Both a & c ()
 Please describe why:

4. People have many reasons for visiting wilderness areas. Please tell us the three most important reasons for choosing to visit these Wildernesses?

- 1.
- 2.
- 3.

5. Which of the following wilderness experiences do you find to be most beneficial to you? Please rank the following statements on a scale of 1 to 5.

- | | |
|-----------------|----------------|
| 1 - Not at all. | 4 - Moderately |
| 2 - Slightly | 5 - Very Much |
| 3 - Somewhat | 6 - Extremely |

_____	Spiritual rejuvenation and enlightenment.
_____	Self awareness and actualization.
_____	Physical challenge and self sufficiency.
_____	Therapeutic/Healing/Stress reduction.
_____	Social bonding with family and friends.
_____	Esthetic values and for creativity.
_____	Resource stewardship (trail maintenance etc.)

6. What values do you feel Wilderness should be managed for? Please provide a Yes or No in the following blanks.

_____	Quality of life for present and future generations.
_____	Commodity uses, both commercial and individual.
_____	Economic benefits, both commercial and individual.
_____	Inherent ecosystem values protected and preserved.
Other _____	

7. When you think of Wilderness, which of the following items do you feel belong. Please circle the appropriate abbreviations for each.

SD - Strongly Disagree
D - Disagree
N - Neutral feeling

A - Agree
SA - Strongly Agree

a. Absence of man-made features, except trails.	SD	D	N	A	SA
c. High standard trails.	SD	D	N	A	SA
d. Low standard trails.	SD	D	N	A	SA
e. Some areas with no trails.	SD	D	N	A	SA
f. Natural forest fires started by lightning.	SD	D	N	A	SA
g. Outhouses (pit toilets)	SD	D	N	A	SA
h. Solitude (not seeing many other people except those in your own party).	SD	D	N	A	SA
i. Restricting the number of users through permits.	SD	D	N	A	SA
j. Limiting the size of parties to 15.	SD	D	N	A	SA
k. Signs along the trail explaining natural history.	SD	D	N	A	SA
l. Use of chainsaws to clear down trees on trails.	SD	D	N	A	SA
m. A guidebook to the wilderness.	SD	D	N	A	SA
n. Interpretative displays outside the wilderness discussing Wilderness ethics and history.	SD	D	N	A	SA
o. Detailed, accurate map.	SD	D	N	A	SA
p. Require visitors to camp in designated areas	SD	D	N	A	SA
q. Rangers or patrol persons in the backcountry.	SD	D	N	A	SA

8. What message would you like to see the Forest Service or other organizations relate to the public about Wilderness values, history, and ethics? What kind of educational programs, brochures and interpretive displays do you feel would be most beneficial in accomplishing this effort.

9. What have been your sources of education on Wilderness management and ethics?

- () College courses Where: _____
() Educational programs. Explain: _____
() Magazine publications. Explain: _____
() Wilderness Books. Which ones: _____
() Media. What sources: _____
() Friends or family Who: _____
() Personal experience. Explain: _____
() Other Explain: _____

10. Please indicate which cultural or ethnic group you most closely identify with:

- () American Indian or Alaskan native
() Asian or Pacific Islander
() Black, not of Hispanic Origin
() Hispanic
() White, not of Hispanic Origin
() Other (please specify) _____

11. Please fill in the following information.

- a. () Male, () Female, b. Age _____,
c. Occupation _____
d. () Married, e. () Student, Where _____
f. How many children? _____, Ages: _____

12. Which of the following categories best describes your annual household income, before taxes?

- | | |
|--------------------------|--------------------------|
| () Less than \$10,000 | () \$35,000 to \$50,000 |
| () \$10,000 to \$25,000 | () \$50,000 to \$75,000 |
| () \$25,000 to \$35,000 | () over \$75,000 |

13. How many weeks of paid vacation does the head of your household receive each year? _____ Weeks.

14. Name and address: _____

15. Would you like to receive a copy of the results to this questionnaire?

THANK YOU FOR YOUR HELP

APPENDIX E

Document Process Flow Chart

